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Martesia Hornbeckii, Chenu, Manuel, ii.

Hab.—West Indies.

The *Pholas Beauiana*, of Recluz, and *P. Caribæa*, D'Orb., are descriptions of the full growth of this shell. *P. Hornbeckii* is a young shell, and is considerably magnified in the plate of Sagra's Cuba, although no reference to that fact is contained there. The shell is figured without the dorsal plate.

The date 1846 is affixed to the descriptions by D'Orbigny, but he does not mention where they were described previously.

This shell was sent to England from Jamaica, by Prof. Adams, with the MSS. name of *P. rosea*, subsequently altered to *P. corticaria*. Mr. Hanley affirmed them to be a variety of *P. striata*, and, in deference to his opinion, Adams suppressed the description.

Sowerby quotes "Gray MSS." for this shell, but Dr. Gray relinquishes his name in favor of Adams, although he considers the shell a synonym of *M. cuneiformis*. I have not seen this species, but conceive from the figures of Sowerby that it is a good one.

I find the following differences in the dorsal plates of the three allied West Indian species:—

In *striata*, somewhat hexagonal, the anterior and posterior margins emarginate, the anterior lateral margins slightly concave, and the posterior lateral margins somewhat convex.

In *cuneiformis*, diamond-shaped, the anterior portion broader and more obtuse.

In *corticaria*, broadly halberd-shaped, truncate and three-sided at the posterior end, with the central margin emarginate.

Addenda.

Pholas cordata, Schröter, Conch. iii. p. 544, t. 9, f. 22—24. Bosc, Hist. Nat. des Coq. ii. p. 196. Bruguière, Encyc. Meth. t. 169, f. 8—10. Catlow, Conch. Nomencl. p. 3. Gmelin, Syst. Nat. p. 3216. Wood, Gen. Conch. p. 85. Wood, Index Test. f. 9.

Hab. —? Two specimens found in a mass of Madreporæ.

I am not able to place this shell in any of the foregoing genera. It appears to be immature, and it is probable that the anterior ventral hiatus is closed in the adult by a callous plate, as in *Martesia*, etc.; but it differs from that genus in the single dorsal plate being placed anterior to, instead of over, the umbones.

Gray, Adams and Sowerby do not mention the species. Should this species be rediscovered, and found to exhibit the above distinctive characters, as indicated by Schröter's plate, I would suggest for it the generic name *SCHROTTERIA*, in honor of its describer.

Descriptions of certain Species of DIURNAL LEPIDOPTERA, found within the limits of the United States and of British America. No. 3.

BY WM. H. EDWARDS.

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| 1. <i>Argynnis Nokomis</i> , nov. sp. | 7. <i>Lycæna Pembina</i> , nov. sp. |
| 2. <i>Grapta Faunus</i> , nov. sp. | 8. " <i>Shasta</i> , nov. sp. |
| 3. <i>Thecla Californica</i> , nov. sp. | 9. " <i>Scudderii</i> , Edw. female. |
| 4. " <i>viridis</i> , nov. sp. | 10. <i>Parnassius Smintheus</i> , Doubleday |
| 5. " <i>affinis</i> , nov. sp. | 11. <i>Limenitis Eulalia</i> , Doubleday. |
| 6. <i>Lycæna Behrii</i> , nov. sp. | |

ARGYNNIS NOKOMIS, nov. sp.

Male. Expands $3\frac{1}{2}$ inches.

Upper side uniform bright fulvous, a little dusky next base; hind margin edged with a fine black line which is preceded by a heavy parallel line; the

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nervures between being black; both wings marked and spotted with black as in *Cybele* and allied species; the marginal spots are lanceolate on primaries; on secondaries the mark in the cell takes the form of an S. Under side: base and inner margin of primaries bright red fulvous; towards the apex buff; six silver triangles within the hind margin next apex, each surmounted with black, and three silver spots on the costa; the anterior one minute.

Secondaries cinnamon brown, somewhat mottled with buff, and having a green tinge next abdominal margin; between the two outer rows of silver spots a broad, immaculate, bright buff belt; hind margin yellowish brown; the silver spots are twenty-one in number, all but those next the base heavily bordered above with black, viz: seven marginal spots, which are edged below also with black; a second row of eight spots, the one next the abdominal margin small and about the size of the fifth; a third row of three large spots, a black point between the first and second from costa; preceding these is a circular spot, and nearer the abdominal margin an oval, both ringed with black; above, near the base, a light spot or bar of silver divided by the sub-costal nervure; costa at base broadly, and abdominal margin very lightly silvered; body above same dusky fulvous as the base of the wings; below light red brown; antennæ long, club massive, dark brown, tipped with fulvous.

Rocky Mountains, and Mountains of California.

This is much the largest of the Pacific species, equalling the largest specimens of *Cybele*. In color it most resembles *Aphrodite*. The female I have not seen.

GRAPTA FAUNUS, nov sp.

Expands two inches.

Primaries deeply emarginate on both hind and inner margins; a prominent rounded tail on the middle of secondaries and a smaller one between this and the anal angle.

Male. Upper side deep orange fulvous, paler next apex of primaries; base of both wings and abdominal margin of secondaries a little dusky, the latter clothed with long hairs; primaries have a broad black hind margin, dilated at the apex, bordered within by a series of obsolete tawny lunules; on the inner margin a large black spot joins the marginal band, there enclosing a tawny spot; on the costal margin near apex, a broad abbreviated bar, black without, ferruginous within, runs obliquely back almost to the marginal band; from the middle of the costa a broad black bar extends to the median nervure, covering the arc; within the cell two round black spots in a transverse line and a third a little back of the same line near inner margin, divided unequally by the third median nervule; in the median interspaces, two rounded black spots placed nearly at right angles to the first three; costal edge of both wings and the incision of inner margin of primaries sprinkled with black and tawny; the hind margin of secondaries is black slightly tinted with fulvous, clouded within, and passes gradually into the basal color, occupying nearly half the wing; costal margin broad and brownish black; on this is an elongate black spot, below which, nearer the cell, is a second, and in the middle of the wing a third, divided by the nervure; fringe white in the emarginations.

Under side. Both wings dark brown next base, with an irregular common blackish band across the middle, darkest on its outer edge and within the abdominal margin, where its outline is obliquely serrated; beyond this band, the color is paler brown mottled with grey white, which is clearest on costa of primaries; the whole surface clouded with vinous, and more or less crossed by fine abbreviated streaks of dark brown; apex of primaries yellow brown, with three small, lanceolate, ferruginous spots, the lower one enclosing a blue or green point; the hind margin of both wings, below these, is bordered by a series of confluent blue black, sometimes olive green spots, following the outline of the wing; a little anterior to this, another series of rounded spots of same

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color, those on secondaries largest and sometimes having black centres, on primaries minute, except the two at the ends of the row; in the disc of secondaries, a white G, varying in form, but usually thick and angular with each end sharp and barbed; body above black, covered with greenish hairs; below, brown grey; antennæ dark brown above, whitish below; club black with a yellow tip.

Female. Under side more greyish, the marginal spots less distinct, and the silver mark more open, sometimes like the L of *Progne*, sometimes like the mark of *Comma*.

This species is found abundantly in certain localities on the Catskill Mountains, New York. It is also found at Fort Simpson, at Albany River, and Lake Winnipeg. It resembles *C. album*, of Europe, and has been supposed to be identical with that species. It differs, however, in many respects. I am informed by Mr. H. T. Stainton, that it is the species which follows *Vanessa Progne* as "*Vanessa* ——" in the list of *Lepidoptera* of the British Museum, Part I., 1844, and that it is regarded as "a distinct unnamed species."

THECLA CALIFORNICA, nov. sp.

Expands 1.3 inch. Size and form of *Falacer*.

Male. Upper side light brown; primaries with a smooth oval spot on disc; near the inner angle two faint fulvous submarginal spots, and at anal angle of secondaries three fulvous lunules, the middle one deepest colored, and sometimes the two next anal angle resting on black spots; tail long, black tipped with white; a white line from its base to anal angle; the fringe against this line is black, but elsewhere whitish without, brown next the margin; anal angle black.

Under side grey with a reddish brown tint; both wings have a straight discal bar edged with white; primaries have, beyond the cell, a transverse band of seven black spots, the one on costa, minute and preceding the others, the seventh duplex; each edged without by white; a marginal row of pale fulvous lunules almost obsolete towards apex, each surmounted with black, which is edged above with white. Secondaries have a transverse band of seven large black spots and a streak turning upward at the abdominal margin; the fifth of these spots from costa precedes the line, and the seventh is largest and cordate; all edged without by white; a marginal row of orange lunules, small or obsolete towards the outer angle, but large and deep colored next anal angle, extending up the abdominal margin and at the angle enclosing a pale blue spot which is sprinkled with black atoms; the lunule beyond this rests upon a small black triangle, and all the lunules are surmounted with black, which is edged above with white; the whole hind margin of both wings is edged with a white line.

Female. The inner angle of primaries and the hind margin of secondaries next anal angle suffused with pale fulvous; under side soiled white.

California, from Dr. H. Behr.

THECLA VIRIDIS, nov. sp.

Expands 1.2 inch.

Upper side of both sexes blackish; the male has a smooth oval spot on disc of primaries; hind margin of secondaries a little crenated towards anal angle; fringe whitish, at anal angle brown.

Under side uniform deep green, except on inner margin of primaries, where it is brownish grey; costal edge of primaries fulvous; across the green shade runs a common sinuous band of elongated, clear-white spots; fringe of secondaries brown at the extremities of the nervures; antennæ white; club dark brown.

California, from Dr. H. Behr.

THECLA AFFINIS, nov. sp.

Expands 1.1 inch.

Both sexes glossy red brown, brightest in female; the male has a smooth
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oval spot on disc of primaries ; costa of primaries and base of both wings blackish brown ; whole hind margin edged with same color ; fringe white.

Under side uniform apple green, except on inner margin of primaries, where it is pale, brownish grey ; both wings immaculate ; costal edge of primaries grey ; hind margin of secondaries without crenations.

Utah, from Mr. C. Drexler.

Both *viridis* and *affinis* are allied to *T. Rubi* and to *T. Dumetorum* of Boisduval. The latter I have not seen, but it is briefly described as being "entirely like *Rubi*, and to be considered a local variety of that species," a description which does not apply to either of the above named species. *Affinis* approaches most nearly to *Rubi* in color below, but the upper side is much brighter, and the white spots of under side are wanting. *Viridis* has similar spots to *Rubi*, but the color of both sides is different, as is that of the antennæ, edge of costa and fringe.

LYCÆNA BEHRII, nov. sp.

Expands 1·2 inch.

Male. Upper side glossy lilac blue, silvery on costa of primaries ; hind margin of both wings fuscous ; fringe long and white.

Under side uniform dark brownish grey sprinkled with blue scales near base of both wings ; edge of hind margin dark brown, along which within runs a fine white line ; primaries have a black discal bar edged with white, and midway towards the margin, a transverse, sinuous row of six black spots, the fourth and fifth from costa reniform, the others smaller and round, all of them broadly encircled with white. Secondaries have a small white spot on costa, a discal bar and a transverse double curved row of eight small round black spots, each encircled with white ; the three spots next abdominal margin minute ; antennæ black with fine white rings ; club black.

Female. Like the male, except that the color above is fuscous, bluish near base.

California, from Dr. H. Behr.

This species is allied to *Lygdamas*, *Doubleday*.

LYCÆNA PEMBINA, nov. sp.

Expands 1·2 inch.

Male. Upper side violet blue ; hind margin of primaries, and entire margin of secondaries fuscous ; a discal spot on primaries from the transparency of the wing ; fringe white without, next the margin blackish.

Under side pale brownish grey ; base of both wings and abdominal margin of secondaries sprinkled with black scales ; primaries have a large reniform black discal spot and a transverse row of six black spots bent near costa into a curve which embraces and terminates at the discal spot, the first spot being as near the discal as to the second ; the first and sixth are smallest and round, the sixth is also sometimes duplex ; the second and third nearly round, fourth and fifth oval and largest ; half-way between this row and the margin is another row of obsolete dark points. Secondaries have two small round black spots on costa, each in a white ring, a black point in the disc near base, a white discal spot and a transverse row, nearly parallel to the margin, of faint white spots, one or two of which have a dark centre ; between this row and the margin an obsolete series of dark points as on primaries ; this row terminates at the anal angle in a large dusky spot.

Female. Brown, slightly bluish at base of both wings ; the discal spot on primaries conspicuous.

Lake Winnipeg, from R. W. Kennicott.

This species is allied to *Pheres*, *Boisduval*.

LYCÆNA SHASTA, nov. sp.

Expands one inch.

Male. Upper side violet blue with a pink tinge ; hind margin broadly fus-

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cous; a large black discal spot on each wing: two or three obsolete spots near anal angle, the second from the angle with a faint yellow lunule; fringe brownish white.

Under side greyish white, bluish next base; primaries have a fuscous spot near base, a discal bar and a transverse sinuous row of elongated fuscous spots, each edged with whitish; along the margin obsolete spots surmounted by faint lunules.

Secondaries have three fuscous points near base; a discal bar and a transverse sinuous row of fuscous spots; whole hind margin bordered by small metallic blue spots, each surmounted by a blackish lunule.

Female. Upper side clear brown; the obsolete spots next anal angle surmounted by a narrow crenated yellow band; under side as in male, but the five spots next anal angle are surmounted by ochrey yellow lunules edged above with black; fringe long and fuscous at the extremities of the nervures.

California, from Dr. H. Behr.

LYCENA SCUDDERII, Edw.

Female. The more common form differs somewhat from that heretofore described, which appears to have been a variety, in that the base of both wings is violet blue, and the black marginal spots of secondaries distinct, the two or three next anal angle surmounted with fulvous; under side as in the male.

This species is found abundantly near London, Canada West, as I am informed by Mr. W. Saunders. I have also received it from Fort Simpson.

PARNASSIUS SMINTHEUS, Doubleday: figured in Genera of Diurnal Lepidoptera, but not described.

Expands $2\frac{1}{2}$ inches. Size and form of *Clarius*.

Male. Both wings pure white, semi-transparent at apex of primaries; hind margin of primaries sprinkled with black scales which take the form of indistinct lunules; a second similar series anterior to these; a black bar on the arc, and, within the cell, a transverse, elongated black spot that terminates a little short of the median nervure; on the costa beyond the cell, a crimson spot in a black ring, and below this a black spot with crimson centre; a small black spot within the inner margin; base of wing and edge of costa thickly sprinkled with black scales; fringe white, cut with black at the ends of the nervures.

Secondaries black at the base and along the abdominal margin, from which black scales extend to the cell and around the arc; a submarginal row of obsolete black spots; a small crimson spot on costal margin and a larger and brighter one in the disc, both in black rings.

Under side with all the markings of the upper, but less vivid in color; secondaries have an additional small crimson spot within the abdominal margin near the anal angle, and at the base four crimson spots in a curved band, each more or less edged with black: the spot in the disc with white centre.

Female. A little larger than the male; the whole hind margin of primaries semi-transparent, enclosing a transverse row of white lunules, but without other spots; the red spots larger and paler, the one on disc of secondaries with white centre; on the under side of secondaries the costal spot also has a white centre, and near the anal angle are two red spots.

California.

LIMENITIS EULULIA, Doubleday: figured in Genera of Diurnal Lepidoptera, but not described.

Expands $2\frac{3}{4}$ inches.

Male. Upper side of both wings olive brown, with a blackish tinge upon the outer limb; hind margin bordered by a broad crenated band of lighter color, through which runs a black line; a large golden yellow apical spot fills the space between the marginal band and narrow costal border of primaries; across

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the middle of the wings a common white band, commencing on the costa of primaries, with a large spot cut into three by the nervures, followed by a second, oval, separated from the first by a wide space, and out of the line in the direction of the inner angle; after this the band is uninterrupted except by the nervures, and diminishes to a point a little within the abdominal margin, on the arc of primaries a narrow, transverse, ferruginous band, and another in the cell, each edged on either side by a black wavy line; a similar line mid-way between these bands; the cell and costa next base have a dull green tinge; at anal angle a black spot within a fulvous lunule; fringe brown, white in the emarginations.

Under side pale brown, with a bronze lustre on secondaries; primaries have a broad hind margin, crenated next the inner angle, with a faint, pale blue line running through it and edged anteriorly by a narrow, pale blue band; the yellow spot as above, but paler; below this and between the marginal and white bands, smoky black; the white band as above but a little enlarged; the bars in the cell larger and fulvous; inner margin next base greyish; hind margin of secondaries narrower than that of primaries, wholly crenated, with a pale blue line running through it and bordered anteriorly by a broad, pale blue band; the white band is edged without, and near its point suffused with light purple; inside the band to the base, are alternate, irregular, transverse bands of purple and lustrous yellow brown; abdominal margin pale blue; the nervures much bordered by purple or blue scales; body above olive brown; beneath, bluish white; antennæ and club dark brown.

Female scarcely differs from the male.

California, from Dr. H. Behr.

Synopsis of the North American Forms of the COLYMBIDÆ and PODICIPIDÆ.

BY ELLIOTT COUES.*

Family COLYMBIDÆ.

Char. Feathers of forehead reaching to the nostrils. Nostrils narrow and linear; their upper edge with a dependent lobe. Lores densely feathered. Tertiaries short and stiff. Tail fully developed. Tarsus and toes covered with small, regular, polygonal, reticulated plates. Tibiæ feathered on the joint. Toes fully webbed. Claws strong, narrow, oblong, very convex superiorly. Posterior edge of tarsus smooth, formed by a single row of very convex overlapping scales. Lobe of hind toe moderate. Size large; general form stout and strong; body robust; neck short and thick, without crests or ruffs; the back spotted.

Genus COLYMBUS Linnæus.

Colymbus, Linn. 1735, et auct. nec Ill. 1811; nec Pallas, 1811; nec Briss. 1764.
? *Cepphus*, Mœhring, 1752, secundum G. R. Gray.

Cepphus, Pallas, 1811, partim.

Mergus, Brisson, 1764, fide G. R. Gray; nec auct.

* The great accession of new material in the Museum of the Smithsonian Institution has furnished the means of making some additions and corrections to the last account of the Loons and Grebes of North America—that by Mr. Lawrence in the General Report. The writer having lately been occupied, in connection with Dr. Geo. Suckley, U. S. A., in the preparation of a Government Report, took the opportunity to institute a thorough revision of the two families. The results of that investigation will be found in full in the Report alluded to; but as it may be some time before its publication, it has been thought advisable to issue in advance this brief synopsis. Particular attention has been paid to the characters of the families and subfamilies, and to the arrangement of the species under their appropriate genera.

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